

2016-1046; -1048

**IN THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

DATATREASURY CORPORATION,

Appellant,

v.

FIDELITY NATIONAL INFORMATION SERVICES, INC.,

Appellee.

**Appeals from the United States Patent and Trademark Office,
Patent Trial and Appeal Board in Nos. CBM2014-00020 and CBM2014-00021**

BRIEF FOR APPELLEE

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2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

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3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None.
4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

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STATEMENT OF RELATED CASES

This consolidated appeal is related to the following pending appeals at this Court: *DataTreasury Corp. v. Jack Henry & Assocs., Inc.*, Appeal Nos. 16-1050, -1052 (consolidated); *DataTreasury Corp. v. Fiserv, Inc.*, Appeal Nos. 16-1229, -1230 (consolidated); and *In re DataTreasury Corp.*, Appeal No. 16-1250. Each of these appeals involves the same patents: U.S. Patent No. 5,910,988 (“the ’988 patent”) and U.S. Patent No. 6,032,137 (“the ’137 patent”).

This appeal is also related to Appellant DataTreasury Corporation’s infringement suit against Appellee Fidelity National Information Services, Inc., in the United States District Court for the Eastern District of Texas: *DataTreasury Corp. v. Fidelity Nat’l Info. Servs., Inc.*, Case No. 2:13-CV-00432-JRG-RSP. The related Appeal Nos. 16-1050, -1052 (consolidated), and Nos. 1229, -1230 (consolidated), are also related to DataTreasury’s infringement suits in the Eastern District of Texas: *DataTreasury Corp. v. Fiserv, Inc.*, Case No. 2:13-CV-00431-JRG-RSP and *DataTreasury Corp. v. Jack Henry & Assocs., Inc.*, Case No. 2:13-CV-00433-JRG-RSP. All of these district court actions are presently stayed.

I. COUNTERSTATEMENT OF THE CASE

Congress specifically identified the patents-in-suit—U.S. Patent Nos. 5,910,988 and 6,032,137 (the “Ballard patents”)—as “the most notorious business method patents” when crafting covered business method patent (“CBM”) review under § 18 of the America Invents Act (“AIA”). They are indisputably financial, and despite their superficial appearance as “computer-heavy,” they are not technological inventions exempted from CBM review. The Ballard patents recite long lists of prior art computers and acronyms that may sound complex, but Congress observed that at their core, the Ballard patents recite nothing more than the routine business practice of imaging documents and transmitting information over a network using conventional computer components and known encryption algorithms. Based on the patents’ disclosure, Patent Owner DataTreasury Corporation’s admissions, the inventor’s prior testimony, and the unrebutted testimony of Petitioner Fidelity National Information Services, Inc.’s expert, the Patent Trial and Appeal Board properly found that the Ballard patents are CBM patents under § 18 of the AIA.

After establishing jurisdiction, the Board properly held all claims of the patents are ineligible for patenting under 35 U.S.C. § 101. The claims cover the abstract concept of transmitting information from one location to another and encrypting that information. As the Board found, this concept is a fundamental

economic business practice like other basic building blocks of human ingenuity found ineligible by the Courts. The claimed two-tier or three-tier network cannot save the claims because it is made of conventional computer components used in expected ways. And, recited at a high level of generality, the claimed steps of “encrypting,” “transmitting” and “processing,” fail to meaningfully limit the abstract idea. Again, the Board based its decision on substantial evidence: admissions in the patents and by DataTreasury, as well as the unrebutted testimony of FIS’s expert performing an element-by-element analysis of each claim as well as considering the claims as a whole.

Substantial evidence also supports the Board’s conclusion that the patents lack written description support for “encrypting subsystem identification information,” recited in some claims. In particular, FIS presented expert testimony that a person of ordinary skill in the art (“POSITA”) would understand that the subsystem identification information is only added after the encryption is complete. DataTreasury did not provide contrary evidence of the POSITA’s understanding, but relied only on attorney argument.

Accordingly, this Court should affirm the Board’s determinations that all claims of the Ballard CBM patents are unpatentable.

II. COUNTERSTATEMENT OF THE ISSUES

1. Whether the Board correctly ruled that the Ballard patents—which Congress identified by name and number when enacting § 18 of the AIA—are “covered business methods” and not technological inventions, where the patents admit they use only off-the-shelf computer components to perform what the Patent Owner describes as “fundamental” financial processes?

2. Whether claims to general-purpose computers, conventional networks, and known data capture, processing, and encryption techniques for performing methods that were admittedly “essentially universal” and performed “by hand” in the prior art are patentable under 35 U.S.C. § 101?

3. Whether the Board properly invalidated all of the challenged claims § 101 by analyzing two representative claims and crediting Petitioner’s expert testimony addressing every other claim, where the Patent Owner did not separately argue any other claims, cross-examine Petitioner’s expert, or present its own expert testimony?

4. Whether the Board correctly found that certain claims lack written description based on expert testimony that a skilled artisan would understand that the specification does not describe “encrypting subsystem identification information,” where the Patent Owner did not present anything other than attorney argument in response?

III. STATEMENT OF FACTS

The Ballard patents, titled “Remote Image Capture With Centralized Processing and Storage,” were filed August 27, 1997, and May 19, 1998, respectively, and are owned by DataTreasury Corporation. J.A.2000; J.A.2045. The ’137 patent is a continuation-in-part¹ of the ’988 patent. J.A.2045.

A. Covered Business Method Review Under § 18 of the AIA

Congress enacted § 18 of the AIA in response to DataTreasury’s self-proclaimed “litigation against the banking industry.” Appellant Br. (“DT_Br.”) 8-9. Senator Schumer, a coauthor of AIA § 18, remarked of DataTreasury’s repeated enforcements and large settlements: “[t]hese suits are over exactly the type of patents that section 18 is designed to address.” J.A.3336. When enacting the AIA, Congress identified the ’988 and ’137 patents by name and number, dubbing them the “Ballard patents.” J.A.2841; J.A.3336. Although early versions of patent reform legislation addressed just the Ballard patents, J.A.2910-2912 (Sec. 13); J.A.3041-3042 (Sec. 14); J.A.3088, Congress ultimately enacted a broader provision, AIA § 18, for all “covered business method” patents. J.A.2544.

¹ The ’137 patent’s additional disclosure is not relevant to this appeal. Like DataTreasury’s blue brief, citations are made only to the ’988 patent for common subject matter. *See* DT_Br. 3 n.1. And, because the papers and Board decisions are similar, and DataTreasury has not argued separate distinctions for the ’137 patent, citations are to the ’988 record (CBM2014-00021) for common subject matter.

Congress designed CBM review to address problems exemplified by the Ballard patents. In particular, Congress targeted patents issued after the 1998 “judicial expansion” of patent-eligible subject matter under § 101 in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008), and before the “subsequent judicial retraction” of § 101 by the Supreme Court in *Bilski v. Kappos*, 561 U.S. 593 (2010), J.A.2841. Congress noted that the tightening of § 101 resulted in “a large number of business-method patents that are no longer valid.” J.A.2841. And following *Bilski*, the Supreme Court’s decisions in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012) and *Alice Corp. Pty. Ltd. v. CLS Bank, International*, 134 S.Ct. 2347 (2014), led to further questioning of many *State Street*-era patents. *See, e.g., Smartflash, LLC v. Apple Inc.*, 621 F. App’x 995, 1002-03 (Fed. Cir. 2015) (unpublished) (stating the *Bilski* “significantly curtailed the patentability of business methods”). In *Mayo* and *Alice*, the Supreme Court explained that a claim must recite “significantly more” than an abstract idea to be patent-eligible, *Mayo*, 132 S. Ct. at 1294; *Alice*, 134 S. Ct. at 2355, making clear that “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention,” *Alice*, 134 S. Ct. at 2358.

With § 18, Congress gave the PTO a tool to review questionable CBM patents even after they had survived reexamination or district court challenges. Reexamination did not allow the PTO to consider §§ 101 or 112 challenges, 35 U.S.C. § 302 (2006); 35 U.S.C. § 301 (2006) (allowing reexamination of patents based on “prior art consisting of patents or printed publications”), so Congress included them in CBM review. *See Leahy-Smith America Invents Act*, Pub. L. No. 112-29, 125 Stat. 284, 329-331, § 18 (2011) (“AIA §18”); 35 U.S.C. § 321(b) (allowing “any ground that could be raised under paragraph (2) or (3) of section 282(b)”). No part of § 18 excludes patents that were previously litigated or reexamined. *See AIA § 18*. Senator Leahy explained that a “prior district court decision upholding the validity of a patent *may not* preclude the PTO from considering the same issues resolved in that proceeding” 157 Cong. Rec. S5428 (daily ed. Sept. 8, 2011) (“S5428”)(emphasis added). Instead, to prevent harassment, Congress set a high standard for institution, requiring a petitioner to show that “it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a); S5428. Like many other CBM patents, the Ballard patents previously survived validity challenges in district court. DT_Br. 8-9. But the PTO has now found many Ballard patent claims unpatentable on prior art grounds in other CBM proceedings, based on the three-tiered Campbell patent, and in a second reexamination of the ’988 patent, based on additional three-

tiered prior art, each of which DataTreasury has appealed. Appeal Nos. 16-1050, 16-1052; 16-1229, 16-1230; 16-1250.

Congress intended § 18 to include “the most notorious business method patents,” even though they sound technological or were classified for examination outside the traditional business method class 705. J.A.2841 (declining to limit § 18 to patents in class 705). Although the ’988 patent was originally classified with cryptography inventions, J.A.2000 (class 380), it was reclassified into class 705 during reexamination, J.A.2027. Congress remarked that the ’988 was “obviously” a business method patent because it uses “an encryption algorithm which is well known to an artisan of ordinary skill in the field.” J.A.2841. Of the technical-sounding components in the Ballard patents, Congress said that,

when patents such as the Ballard patents recite elements incorporating off-the-shelf technology or other technology “know[n] to those skilled in the art,” that should not preclude those patents’ eligibility for review under this program.

Id. The PTO similarly explained that § 18 applies to claims “[c]ombining prior art structures to achieve the normal, expected, or predictable results of that combination.” J.A.3242.

B. The Ballard Patents’ History

For over a decade, DataTreasury has asserted the Ballard patents across the banking industry. DataTreasury calls its patents “foundational to modern day,

image-based check processing,” and touts lawsuits against “dozens” of banks and licenses to a “vast majority of the top twenty-five banking institutions in America.” DT_Br. 8; J.A.3182 [¶¶1-4]. In its litigation against FIS, DataTreasury claims its patents cover systems where merchants, consumers, or banks capture “check images” for electronic deposit and processing. J.A.3184 [¶11]. This campaign concerned Congress, particularly following the *Bilski/Mayo* shift in § 101 jurisprudence. J.A.3336.

The Ballard patents originated from an application filed in 1997. J.A.2000; J.A.2045. While they were pending at the PTO, the low-threshold “useful, concrete, and tangible result” test was established to determine patent-eligibility under § 101. *State St.*, 149 F.3d at 1375. The ’988 patent issued in June 1999, eleven months after *State Street Bank*, compare J.A.2000 with *State St.*, 149 F.3d 1368, and the ’137 patent issued in February 2000, nine months later, J.A.2045.

A first reexamination of the Ballard patents in 2007 confirmed the challenged claims. J.A.2027; J.A.2072. But in a second reexamination of the ’988 patent, the PTO found many of the claims unpatentable over prior art, and an appeal is copending. *See* Appeal No. 16-1250, Dkt. No. 16, Appellee Br. 2 (Mar. 10, 2016).

DataTreasury alleges that U.S. Bank (not a party here) challenged the Ballard patents on § 101 grounds in district court, DT_Br. 9-10, but the March

2010 jury verdict was entered before the Supreme Court decided *Bilski* in June 2010.

C. The Ballard Patents' Disclosure

The Ballard patents describe capturing an image of a financial document, transmitting the image to a storage facility, and storing the imaged financial information. In the '988 patent, the financial information may be a document or receipt, J.A.2038[2:58]; in the '137 patent, it is a check, J.A.2068 [22:51].

1. The Disclosed System

In sworn testimony, Mr. Ballard admitted that he did not invent hardware or any software programs, but rather that he combined only known off-the-shelf components. *See* J.A.3303 [56:20-25]; J.A.3310 [63:15-24]. The patents describe these off-the-shelf components using names that Ballard coined: the DataTreasury System Access Terminal (“DAT”) (J.A.2002 [Fig. 1, 200]; J.A.2003 [Fig. 2]); the DataTreasury System Access Collector (“DAC”) (J.A.2002 [Fig. 1, 400]; J.A.2006 [Fig. 4]); and the DataTreasury System Processing Concentrator (“DPC”) (J.A.2002 [Fig. 1, 600]; J.A.2008 [Fig. 6]); *see* J.A.2013 [4:22-27]. But the patents explain that these specially named components are made up of only generic computers. The DAT is a “general purpose network computer” running known prior art operating systems. J.A.2014 [5:40-45]. The DAC is a generic server running known Microsoft or Windows software. J.A.2017 [11:57-62]. The DPC is

a generic workstation that “has the ability to perform standard operations” of a computer. J.A.2019 [15:9-15]. As the inventor explained in an interview, he “didn’t invent the scanner . . . networking, or computers or software” J.A.3325.

Figure 1, reproduced and annotated below, shows the DAT 200, DAC 400, and DPC 600 arranged in three tiers. In the claims, the patents refer to these levels as “remote,” “intermediate,” and “central,” as annotated. J.A.2025 [27:17-41]; [28:16-34]. During prosecution, DataTreasury distinguished prior art already disclosing a three-tiered architecture by adding an imaging system to the remote subsystem. J.A.3338-3339.

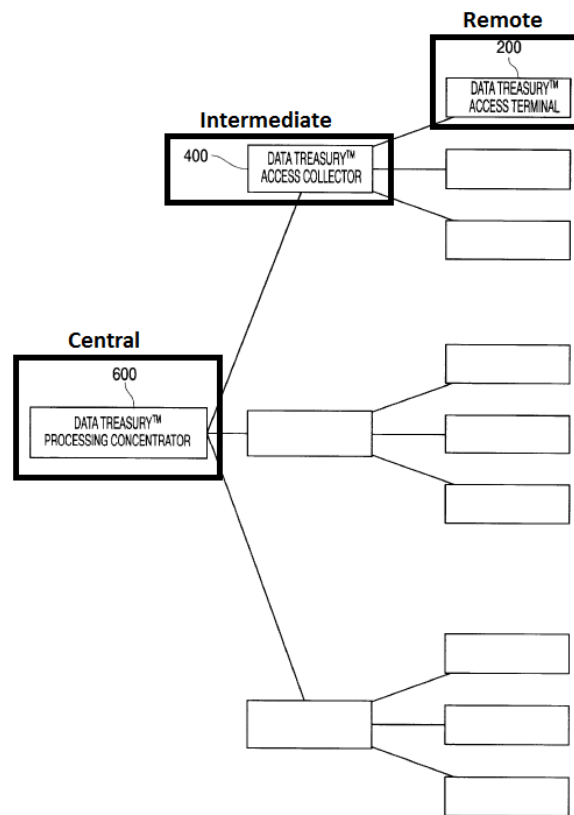


FIG. 1

The patents give off-the-shelf examples of the DAT, DAC, and DPC. FIS's expert prepared a chart detailing his component-by-component analysis showing where the Ballard patents identify each of the well-known hardware and software elements. J.A.2109-2113 [¶105].

2. The Encrypting, Scanning, and Processing Steps

The patents describe scanning a financial document, such as a receipt, and transmitting the scanned image to another location. As shown in Figure 3A below, an off-the-shelf scanner associated with the DAT is used to scan the document and create a bitmap image,² called “BI,” of the document. J.A.2015 [7:52-57]. The DAT—a general purpose computer—compresses the BI to create a compressed bitmap image (“CBI”), which is then encrypted to create an encrypted compressed bitmap image (“ECBI”). J.A.2015 [7:61-65, 8:3-10]. Finally, a tag is added to the ECBI to form a tagged encrypted compressed bitmap image (TECBI). J.A.2015 [8:13-20]; J.A.2016 [10:27-57].

² “Bitmap” is a commonly-known data format, J.A.2014 [5:47], and compression was well-known, J.A.2015 [7:61-64].

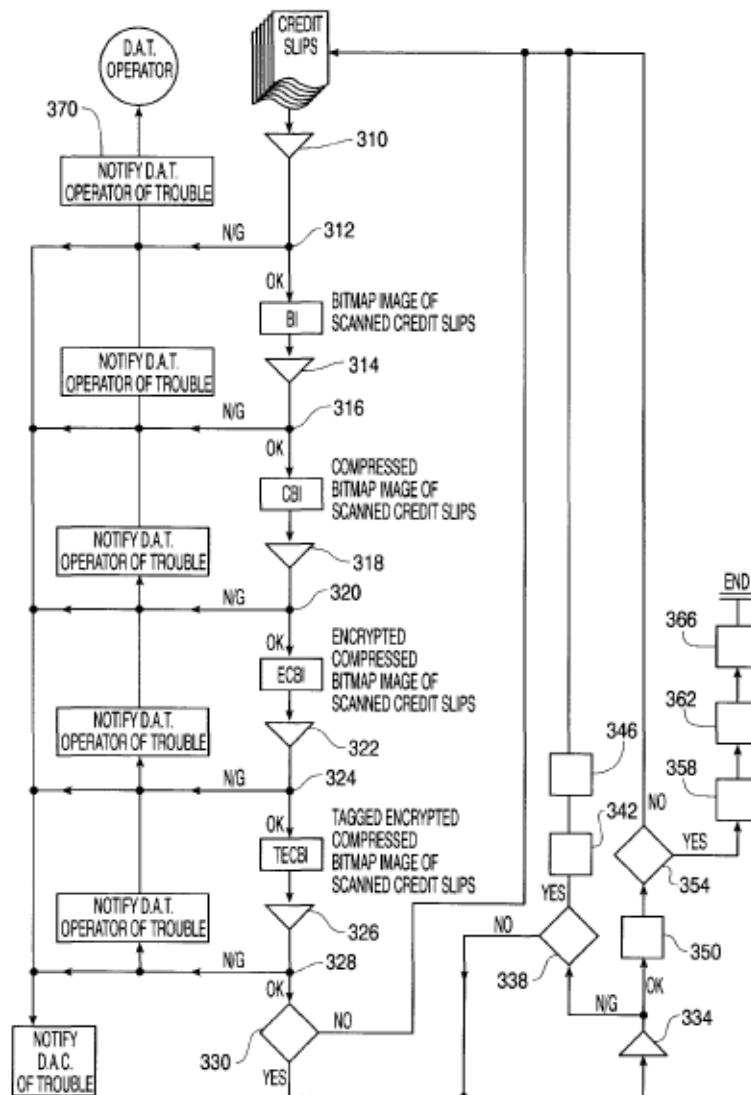


FIG. 3A

Mr. Ballard admitted he did not invent an encryption algorithm. J.A.3330-3331. The patents use “an encryption algorithm which is well known to an artisan of ordinary skill in the field to encrypt.” J.A.2015 [8:3-5]. He also admittedly did not invent check scanning, subsystem identification information, or transmitting data. J.A.3329 [4:17-23], J.A.3331 [6:15-18] (check scanning), J.A.3329-3330

[4:23-5:12] (scanner ID numbers), J.A.3331 [6:6-18] (networks and transmitting check images over networks).

As part of the scanning and tagging process, the patents describe two different types of data: information contained on the receipt that is scanned, J.A.2016 [9:33-10:26], and information in the tag that is added to the already-scanned-and-encrypted image, J.A.2016 [10:27-57]. The information on the receipt is common transaction data, like, the amount, merchant name, payment information, credit card number, and tax. J.A.2016 [9:33-10:26]. This transaction information printed on the receipt is scanned when the receipt is scanned to create the “BI.” The information in the tag, however, is added after the receipt is scanned, compressed, and encrypted, and contains information about the DAT that processed the scanned image. J.A.2016 [10:27-57]. The tag information includes, for example, a subsystem identification number, called the DAT_TERMINAL_ID, which “uniquely identifies DAT 200” used to scan the receipt, and the DAT_SESSION_DATE, i.e., the date the receipt was scanned. J.A.2016 [10:31-36].

3. The Claims

The Ballard patents include two groups of independent claims. Claims 1 and 26 of the '988 patent and all independent claims of the '137 patent recite a two-tier network that sends data between remote and central subsystems over a network

and require encrypting “subsystem identification information.” Independent claims 42, 46, 93, 97, 102, 106, 110, 114, 118, and 121 of the ’988 patent recite a three-tiered network that sends data between remote, intermediate, and central subsystems. The dependent claims add well-known components and processing steps, but were not separately argued by DataTreasury.

D. The Proceedings at the Board

1. FIS’s Petitions and Dr. Alexander’s Expert Testimony

After DataTreasury sued FIS on the Ballard patents, FIS filed CBM petitions challenging both patents. J.A.2560; J.A.2322-2323. FIS challenged all claims of the Ballard patents under 35 U.S.C. § 101, explaining that they recited an abstract idea of image-based check processing using only well-known, conventional components that did not provide meaningful limitations to the claimed abstract idea. J.A.2564-2582; J.A.2326-2343. FIS also challenged claims 1-41 and 51-69 of the ’988 patent and claims 1-67 of the ’137 patent under 35 U.S.C. § 112, ¶ 1, because they lacked written description for “encrypting subsystem identification information” and “encrypted subsystem identification information.”³ J.A.2583-2591; J.A.2344-2352.

³ “Encrypting subsystem identification information” is used to refer to both “encrypting subsystem identification information” and “encrypted subsystem identification information,” claim limitations treated as identical below.

a. FIS cited the legislative history of the Ballard patents and explained how the claims meet the statutory definition of CBM

FIS reviewed the legislative history forth above in Section III.A, J.A.2550-2552, and explained that the patents are “financial in nature,” J.A.2552-2553, and not directed to “technological inventions,” based on an analysis of claim 26 in each patent, J.A.2555-2560; J.A.2316-2322. FIS relied on statements in the specification regarding the devices and algorithms known in the art, Mr. Ballard’s prior testimony, and FIS’s expert’s testimony regarding the claims and state of the art. J.A.2555-2560; J.A.2317-2322.

b. FIS submitted expert testimony supporting its § 101 arguments

FIS submitted the declaration of Dr. Alexander, J.A.2085-2151, an expert in the field of networked systems and software, J.A.2088 [¶¶2-4]. Dr. Alexander detailed the state of the art when the Ballard patents were filed. Before check imaging was computerized, checks and other papers were boxed and flown to their destination for processing. J.A.2095-2096 [¶¶37-38]. The paper checks traveled through several locations, such as from an ATM, to intermediate locations like a bank branch, and finally to a central location for final processing. *Id.* Dr. Alexander explained that prior art systems, such as the IBM Image Plus system, the Chase Manhattan Image Processing System, the NCR 7731 Document Processing System, and the CHECCRS and CHECCS systems, automated this

manual process of transporting documents by scanning images of documents and transmitting the electronic images to other locations over networks. J.A.2094-2104 [¶¶31-77].

Dr. Alexander also described a 1997 POSITA's⁴ understanding of the Ballard patents. For example, he explained that the patents employed only previously known technology, showed where each claim element could be found in the prior art, and how each component performs its ordinary and expected functions in the combination. J.A.2109-2119 [¶¶104-128]. Dr. Alexander explained that two-tier and three-tier computer networks, like those in the Ballard patents, were known in the prior art and banking industry. J.A.2093-2095 [¶¶28-30, 34, 36]; J.A.2096-2104 [¶¶42-77]; J.A.2139-2142 [¶¶208-214]. For example, the IBM, Chase, NCR, and CHECCRs systems used two-tier networks for scanning and transmitting financial documents, some of which also encrypted the information. J.A.2093-2095 [¶¶28-30, 34, 36]; J.A.2096-2104 [¶¶42-77]; J.A.2139-2142 [¶¶208-214]. And at least one prior-art reference, *Campbell*,⁵ describes a three-tier network for transmitting check images. J.A.2093-2118 [¶¶29, 34, 48-51, 58, 70-71, 125]; J.A.2139-2141 [¶¶208-211]. Dr. Alexander also recognized Mr. Ballard's

⁴ DataTreasury does not dispute the assessment of a POSITA's qualifications. J.A.2089 [¶10].

⁵ U.S. Patent No. 5,373,550, which the Board found anticipates or renders obvious claims of the Ballard patents. Appeal Nos. 16-1050, -1052, -1229, -1230.

prior testimony that he did not invent hardware or software, the disclosed networks, encryption, scanning or imaging of checks, transmitting scanned images of check, or the concept of a subsystem identification number. J.A.2119-2122 [¶¶129-138].

Dr. Alexander testified that every claim element in the patents was well-known or routine and conventional. J.A.2109-2122 [¶¶104-138]. In particular, Dr. Alexander identified where the patents explained that the each component of the DAT, DAC, and DPC was previously known in the art, providing a mapping to each admission in the specifications. J.A.2109-2113 [¶105]. He then explained how a POSITA would have known how to perform each of the steps of representative claim 26, identifying the generic hardware disclosed in the Ballard patents and prior art systems that accomplished those functions. J.A.2113-2115 [¶¶106-111]. Dr. Alexander then considered all of the limitations of each of the claims, including the dependent claims, explaining how each element was described in the patents and providing examples where that element was well-known in the prior art. J.A.2115-2119 [¶¶112-128].

c. FIS submitted expert testimony supporting its § 112 arguments

Dr. Alexander also testified that the patents lack written description support for “encrypting subsystem identification information” as claimed.⁶ J.A.2123-2134 [¶¶144-184]. Dr. Alexander described a POSITA’s understanding of the scanning and encryption process shown in Figure 3A, reproduced above.

As Dr. Alexander explained, the Ballard patents scan a receipt to create an image (called a bitmap image or “BI”) at step 310 and then compress (“CBI”) and encrypt (“ECBI”) the image at steps 314 and 318. J.A.2125 [¶149]. The encrypted image corresponds to the paper transaction data from the receipt. *Id.* Dr. Alexander explained that a tag is added to the encrypted image at step 322 to make the “TECBI.” *Id.* The tag contains the DAT_TERMINAL_ID, which a POSITA would understand as the claimed subsystem identification information. J.A.2126 [¶¶151-153]. The Ballard patents do not describe encrypting this tag, which is added after encrypting the scanned image. J.A.2022 [21:3-10]; J.A.2125-2127 [¶¶149, 154, 156-157]; J.A.2283-2284 [94:1-95:24]. Dr. Alexander explained that a POSITA would understand that the subsystem identification information must be different the paper transaction data on the receipt, and concluded that a POSITA would not

⁶ This term appears in claims 1-41 and 51-69 of the ’988 patent and all claims of the ’137 patent. J.A.2022-2025 [22:20-27:16]; J.A.2039 [3:11-4:40]; J.A.2068-2071 [22:48-28:45]; J.A.2083-2084 [2:42-4:15].

understand the Ballard patents to disclose “encrypting subsystem identification information.” J.A.2126 [¶155]; J.A.2128 [¶159]; J.A.2133-2134 [¶¶183-184].

FIS also submitted prior testimony of DataTreasury’s litigation witness, Mr. Hiles, J.A.2268-2298, which Dr. Alexander explained confirms that the patents lack express written description for “encrypting subsystem identification information.” J.A.2128-2129 [¶¶160-161]. When cross-examined, Mr. Hiles acknowledged that the Ballard patents do not disclose encrypting the DAT_TERMINAL_ID, but instead opined that it would be obvious.

Q [Mr. Clayton] So the -- the DAT terminal ID is not encrypted; isn't that correct?

A [Mr. Hiles] It's not encrypted in that step.

Q Is there -- is there any other step which shows that it's been encrypted?

A When I analyzed the patent on a different matter, I was asked about the reference to taking a key out of the tag to decrypt the TECBI -- the encrypted portion. And the -- later in the patent, it describes that key as being found in the tag.

And I wrote, and still this is my opinion, that to send the key to an encryption, an unencrypted tag, would be like putting the combination of a lock on the back of the lock. And that *a person of ordinary skill in the art would have understood* that they needed to encrypt the tag as well.

* * *

Q -- that one of ordinary skill in the art would have come to that conclusion. *But there's nothing in this patent that describes what you just described, is there?*

A *That's correct.*

J.A.2283-2284 (emphasis added). Mr. Hiles also confirmed that information on the receipt of Figure 3B, such as the “`TERMINAL_ID 372`” (cited in DataTreasury’s brief, DT_Br. 6, 44), does not identify a subsystem:

Q That's correct. But it -- the -- the document, that number doesn't identify the scanner, does it?

A No, it does not.

J.A.2277. DataTreasury did not cite or rely on Mr. Hiles’s testimony below and did not dispute in its papers that Mr. Hiles acknowledged that the Ballard patents fail to provide express written description of the tag, which contains the subsystem identification information. J.A.2640-2643; J.A.2744-2747.

Dr. Alexander further explained why Mr. Hiles’s suggestions regarding inherency or obviousness are incorrect, explaining that a POSITA would not understand the patents to require encryption keys to be sent with the tag and would know how to encrypt the image without actually transmitting the keys. J.A.2129-2134 [¶¶162-184]. Although DataTreasury made one passing reference to Mr. Hiles before the Board, J.A.2819 [36:8-14], DataTreasury did not identify any flaw in Dr. Alexander’s analyses or identify Mr. Hiles’s testimony as supporting written description, J.A.2640-2643; J.A.2744-2747. The Board credited Dr. Alexander’s testimony in its Final Written Decision. J.A.113; J.A.89-90.

2. DataTreasury's Arguments at the Board

At the Board, DataTreasury disputed four things: (1) whether the Ballard patents are CBM patents; (2) whether imaging and encrypting documents are abstracts idea under § 101; (3) whether a three-tier network adds “significantly more” to an abstract idea, and (4) whether encrypting “identification information” using a subsystem provides § 112 disclosure for “encrypting subsystem identification information.”

a. Whether the Ballard Patents are CBM patents

DataTreasury acknowledged discussions of the Ballard patents in § 18's legislative history, but argued “no weight could possibly be reasonably given to such empty political posturing.” J.A.2686. DataTreasury argued that the claims “provid[e] a solution to the transmission of financial information” using “technological equipment,” J.A.2693, and pointed to the three-tier architecture, J.A.2695-2696. As evidence that its solution was novel and nonobvious, DataTreasury relied on the PTO's determinations in original examination and in reexamination. J.A.2696. DataTreasury further argued that “there are a large number of other so-called ‘banking’ or ‘financial’ patents,” questioning whether these should all be subject to CBM review despite their surviving initial examination and, in some cases, reexamination. J.A.2448; *see also* J.A.2696-2697.

b. Whether scanning and encryption are abstract ideas

DataTreasury identified “the real issue in this CBM Proceeding” as “whether the teaching of scanning or imaging of documents and receipts is an ‘abstract idea.’” J.A.2728. DataTreasury acknowledged that scanning and imaging documents “is essentially universal, especially in business environments, for example, banking or financial businesses,” and therefore, asserted that it is not an abstract idea. J.A.2720. DataTreasury noted that scanning and imaging documents was “routine in banking and financial patents” of the prior art, J.A.2725, describing them as “well-known practices used by financial institutions with respect to imaging documents and receipts.” J.A.2728-2729. DataTreasury maintained that because scanning and imaging are “performed by appropriate hardware, whereby concrete objects such as documents and receipts are imaged or scanned,” it is not abstract. J.A.2725.

DataTreasury also argued that “encryption of data cannot qualify as an ‘abstract idea,’” J.A.2732; J.A.2734; J.A.2736-42, because “encryption of data is neither a ‘disembodied concept’ nor ‘a basic building block of human ingenuity,” J.A.2736. But DataTreasury acknowledged that encryption “as a general security measure is, in general ubiquitous.” J.A.2734. In support, DataTreasury identified prior art that teaches encrypting data, including images of scanned documents. J.A.2739-2741.

In performing its § 101 analysis, DataTreasury asserted that “the machine-or-transformation test . . . does not have any applicability in this Proceeding.”

J.A.2718.

c. Whether a tiered network adds “significantly more” to an abstract idea

DataTreasury argued that its three-tier structure of ’988 claim 46, including the remote, intermediate, and central subsystems, “recites specific structural components” that accomplish the claimed methods. J.A.2742-2743. DataTreasury alleged that in the ’137 patent, claim 43 “require[s] particular apparatus structure that limits the method steps recited in the claim in a meaningful way” because it “recites specific structural components” and “accomplishes the specific method steps of transmitting data “within and between” the subsystems.” J.A.2495-2496. Yet, when the Board asked DataTreasury to identify the “meaningful limitations” in the claims, DataTreasury answered that the claims “archive[] scanned document information in a secure, central computer system.” J.A.2816-2818 [33:11-35:10].

d. Whether “encrypting subsystem identification information” includes encrypting “identification information” using a subsystem for § 112 disclosure

DataTreasury premised its § 112 argument on the disclosure of receiving “identification information” at col. 10, ll. 58-67. J.A.2745. Pointing to the receipt in Figure 3B that is processed by the general purpose DAT, DataTreasury argued that “[e]ncrypting subsystem identification information” is a claim limitation

indicating that the data about ‘identification information’ as that term is defined in the original specification . . . is ultimately encrypted in a subsystem of the overall system.” J.A.2746. DataTreasury also recognized that “a tag that identifies the DAT itself is attached” after encrypting the image and argued that the patents generically disclose encryption. J.A.2747.

e. No supporting expert testimony or cross-examination of Dr. Alexander

Although the Board’s rules permit a patent owner to submit expert testimony, 37 C.F.R. § 42.53(a), and cross-examine the petitioner’s expert witness, 37 C.F.R. § 42.51(b)(1)(ii), DataTreasury did not submit any expert testimony and never sought to cross-examine FIS’s expert. J.A.167; J.A.2681-2763.

f. DataTreasury’s admissions

DataTreasury did not dispute that all of the claimed hardware and software was well-known. J.A.2806 [23:12-14]. During trial, DataTreasury admitted:

- “scanning or imaging documents and receipts . . . is a practice that is essentially universal, especially in business environments, for example, banking or financial businesses,” J.A.2720;
- “[s]canning or imaging documents is routine in banking and financial patents,” J.A.2725;

- prior art references, including Campbell, Benton, Caslavka, J.A.2725-2728, show the well-known practice by financial institutions of “imaging documents and receipts,” J.A.2728-2729;
- computerized imaging and remote storage of images “are simply functions that are well known, fundamental and necessary with respect to banking procedures and transactions, which were at one time performed ‘by hand,’” J.A.2631;
- the purported invention uses a “generic scanner” and that the alleged invention was “not the scanning,” J.A.2809 [26:22-23]; J.A.2813 [30:7-24]; J.A.2815 [32:16-21];
- encrypting data was a “well-known concept” and “ubiquitous” prior to the filing of the Ballard patents, J.A.2734; J.A.2741; *see also* J.A.2815 [32:16-23];
- scanning and transmitting data (including encrypted data) was a conventional business practice before filing of the patents, citing Campbell, Geer, Dilella, Houvener, Ray, Axelrod, Barnhard, and the IBM ImagePlus system, J.A.2696-2697; J.A.2739-2741;
- “subsystem identification information” must be different from the “paper transaction data,” J.A.2837 [54:19-23]; and

- the DAT_TERMINAL_ID identified by Dr. Alexander is “subsystem identification information,” J.A.2822 [39:4-8].

FIS and the Board treated claims 26, 42, and 46 of the '988 patent and claims 26 and 43 of the '137 patent as exemplary, J.A.96-101, 109-110; J.A.13-17, 20, which DataTreasury acknowledged, J.A.2808 [25:13-17]. DataTreasury did not argue that any dependent claims are patentable for separate reasons, stating that it “didn’t have to argue the claims separately.” J.A.2808-2809 [25:18-26-1].

DataTreasury did not submit evidence of a POSITA’s understanding with respect to § 112. Although DataTreasury devoted nine pages of its Response to discussing Dr. Alexander’s declaration, J.A.2720-2729, it did not disagree with his opinions regarding a POSITA’s understanding of DAT_TERMINAL_ID as the claimed “subsystem identification information” or a POSITA’s understanding of the related disclosures. DataTreasury also did not dispute that its own litigation expert confirmed that the patents lacked express written description, but instead asserted that a POSITA would find the claims obvious or inherent. *See* J.A.2283-2284. DataTreasury also did not dispute Dr. Alexander’s opinion that a POSITA would not understand the claims to require sending encryption keys, that a POSITA would not send encryption keys with data, and that a POSITA knew how to send encrypted keys without encrypting the subsystem identification in the tag. J.A.2129-2131 [¶¶162-170].

3. The Board’s Decisions Finding Unpatentability

After considering all of the evidence, the Board issued final written decisions for the ’988 patent, finding claims 1-123 unpatentable under § 101 and claims 1-41 and 51-69 unpatentable under § 112, J.A.114, and for the ’137 patent, finding claims 1-67 unpatentable under both § 101 and § 112, J.A.31-32. The Board construed several claim terms, which are not disputed in this appeal. J.A.99.

a. The Board’s findings of CBM jurisdiction

The Board reaffirmed its CBM findings from institution—that both patents claim covered business methods under § 18. J.A.16-17; J.A.99-101. The Board noted that DataTreasury only contested whether the patents recite a technological invention. J.A.99-100. The Board found that the patents do not “recite a technological feature that is novel and unobvious over the prior art,” because the claims use only ““off the shelf” technology, including conventional imaging scanners attached to a general purpose computer network,” and because DataTreasury did not explain “explain how a three-tier system is technological.” J.A.100. Thus, the Board concluded that the patents are eligible for CBM review. J.A.100-101.

b. The Board’s findings under § 101

i. Abstract idea

Analyzing the language of representative claims 26 (’988 patent) and 43 (’137 patent), the Board found that the claims are “directed to the underlying idea

of transferring information from one location to another where the transferred information is unreadable without a secret decoder key.” J.A.20; J.A.103. The Board concluded that this information transfer is an unpatentable abstract idea under § 101. J.A.20; J.A.103. The Board also observed that claims 50 and 70-123 of the ’988 patent do not require encryption and are therefore “even broader.” J.A.103, n.3.⁷

The Board rejected DataTreasury’s argument that the claims are not abstract. J.A.104-107. The Board agreed with DataTreasury that “the basic concept of encryption is ubiquitous” and is a “basic building block of human ingenuity that has been used for hundreds, if not thousands, of years” and could be performed using pencil and paper. J.A.104. The Board concluded, based on Supreme Court precedent, that universal business practices constitute abstract ideas, and the presence of tangible objects does not prevent finding an abstract idea. J.A.106-107. Given the generic language of the claims, the Board found that the patents created “a risk of unacceptable preemption.” J.A.106.

ii. No meaningful limitations

Turning to step 2 of the *Alice* test, the Board analyzed claim 26 of the ’988 patent and claim 43 of the ’137 patent, because they recite the additional step of encrypting subsystem identification information, J.A.25-26; J.A.108-109; *see also*

⁷ Claims 42-49 of the ’988 patent also do not require encryption.

J.A.26 n.2; J.A.109 n.4. The Board agreed with DataTreasury that encryption was “ubiquitous” and, therefore, does not recite a meaningful limitation on the abstract idea. J.A.109. Noting DataTreasury’s admission that the Ballard patents use only “off the shelf” technology and “do not claim any ‘particular’ machines or components,” and crediting Dr. Alexander’s testimony, J.A.109, the Board found that the claimed three-tiered architecture was “conventional in the banking and financial services industry” and the claims “simply arrange old well-known elements with each performing the same function it had been known to perform,” J.A.109. The Board concluded that the claims pose an unacceptable risk of preemption and do not meaningfully limit the claims. J.A.109-111. The Board then explained that scanning a document merely appends conventional steps, specified at a high level of generality, to the abstract idea and does not transform the underlying article, and therefore, does not result in an inventive concept. J.A.110.

c. The Board’s findings under § 112

The Board found claims 1-41 and 51-69 of the ’988 patent and claims 1-67 of the ’137 patent lack written description for the claimed “encrypting subsystem identification information” under § 112, ¶ 1. J.A.111-113; J.A.28-31. In particular, the Board found that these claims require two different types of encrypted information: 1) encrypted paper transaction data and 2) encrypted subsystem identification information, J.A.111, consistent with DataTreasury’s admission that

subsystem identification information is not the same as paper transaction data, J.A.2837 [54:19-23]. The Board noted several passages from the specification, including col. 10, lines 58-67 (DT_Br. 44-45), and concluded that the patents describe adding a tag containing the subsystem identification information (DAT_TERMINAL_ID) after the receipt image is encrypted, but do not disclose encrypting the tag itself. J.A.112-113. In making this finding, the Board credited Dr. Alexander's testimony and found that:

1. the specification fails to describe encrypting the DAT_TERMINAL_ID;
2. generic "identification information" mentioned in the patents does not constitute the claimed subsystem identification information; and
3. subsystem identification information is not included in the "paper transaction data" of the disclosed receipt.

J.A.113. The Board rejected DataTreasury's argument that the patents merely require encrypting "identification information." J.A.112. The Board thus held that the Ballard patents lack written description. J.A.113.

d. Rehearing

DataTreasury argued that the Board improperly concluded that the claims are abstract ideas, did not consider the limitations of the dependent claims, misapplied the machine-or-transformation test, and erred by analyzing representative claim 26 of the '988 patent because it does not include the three-tiered limitation recited in other independent claims. J.A.3381-3388. The Board

affirmed its § 101 conclusion, confirming that it considered every claim before finding that they were merely an arrangement of old, well-known elements performing the same functions they were previously known to perform. J.A.87-88. The Board also recognized that DataTreasury did not present separate arguments for any dependent claims during the trial. J.A.88.

DataTreasury argued that the Board's § 112 decisions improperly shifted the burden to DataTreasury to show patentability. J.A.3388-3392. The Board rejected this argument, explaining that FIS and its expert had met their burden to show unpatentability. J.A.89-90. The Board affirmed its factual findings that subsystem identification information is not included in the paper transaction data on the receipt, that subsystem identification information is different from generic "identification information," and that the patents fail to disclose encrypting the DAT_TERMINAL_ID, concluding that the claims lack written description. J.A.89-90.

IV. SUMMARY OF THE ARGUMENT

DataTreasury agrees the Board's finding that the Ballard patents are financial was not arbitrary and capricious, and disputes only the "technological invention" prong of CBM jurisdiction. But the patents, the inventor, and DataTreasury all acknowledge—consistent with FIS's expert—that the hardware and software in the patents was known. The PTO and this Court have recognized

that using off-the-shelf technology in its ordinary and expected fashion does not result in a “technological invention” exempt from CBM review.

Regarding § 101, DataTreasury acknowledges that the claims recite scanning and transmitting documents that were “routine” business practices prior to the patents’ filings, that could be performed “by hand.” Thus, the claims are directed to a “routine business practice,” which is an unpatentable abstract idea under *Alice*. The claims do not add significantly more than this abstract idea. The Board properly rejected DataTreasury’s argument that encryption (present in some claims) provides significantly more, because encryption was admittedly well-known in the prior art, generically recited in the claims, and the inventor admitted that he did not invent a new encryption algorithm. The three-tier network (present in other claims) also does not provide significantly more, because all of its components were known in the prior art, function in their ordinary and predictable manner, and are recited as “purely functional and generic” structures in the claims. Moreover, the Board heard evidence that three-tiered financial networks were known in the art. During trial, FIS submitted evidence that every claim element in the independent and dependent claims failed to add significantly more to the abstract idea. The Board credited this evidence, and DataTreasury did not challenge its sufficiency or accuracy.

Substantial evidence supports the Board's conclusion that claims 1-41 and 51-69 of the '988 patent and claims 1-67 of the '137 patent lack written description support for "encrypting subsystem identification information." The unrebutted testimony of FIS's expert described the POSITA's understanding of the specification, and DataTreasury did not provide contrary expert testimony, cross-examine FIS's expert, or provide anything other than attorney argument in response. Based on the only record evidence of the POSITA's knowledge, the Board properly concluded that the claims lack written description.

V. STANDARD OF REVIEW

This Court reviews the Board's conclusions of law de novo and its findings of fact for substantial evidence. *In re Sullivan*, 498 F.3d 1345, 1350 (Fed. Cir. 2007). "Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Blue Calypso, LLC v. Groupon, Inc.*, No. 2015-1391, 2016 WL 791107, at *3 (Fed. Cir. Mar. 1, 2016) (quoting *Consol. Edison Co. of N.Y. v. NLRB*, 305 U.S. 197, 217 (1938)). "[W]here two different, inconsistent conclusions may reasonably be drawn from the evidence in record, an agency's decision to favor one conclusion over the other is the epitome of a decision that must be sustained upon review for substantial evidence." *In re Jolley*, 308 F.3d 1317, 1329 (Fed. Cir. 2002).

The Board’s determination that a patent is a “covered business method” under § 18 will be reversed only if it is arbitrary and capricious. *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1315 (Fed. Cir. 2015). Patent eligibility under § 101 is reviewed *de novo*. *Content Extraction and Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1346 (Fed. Cir. 2014). The Board’s determination that a patent lacks written description under § 112 is a question of fact, reviewed for substantial evidence. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc).

VI. ARGUMENT

A. The Board Correctly Concluded that the Ballard Patents Are “Covered Business Method” Patents

The Board’s jurisdictional CBM determination was proper. Congress specifically considered the Ballard patents when enacting § 18 and designed CBM review to encompass patents that, like them, are business method patents that seem technical, but do not pass muster under the Supreme Court’s recent § 101 jurisprudence. The Ballard patents claim financial data processing that admittedly uses only previously-known, conventional components and processes. On appeal, DataTreasury presents only conclusory or waived arguments to dispute whether the claims recite a “technological invention” exempt from CBM review, but the evidence—patent specifications, inventor’s admissions, and Dr. Alexander’s unopposed testimony—supports the Board’s determinations.

1. Combining Known Technologies in Ordinary Ways Does Not Exempt Patents from CBM Review

CBM patents “claim[] a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1). A claim is to a technological invention only if “the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.” *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1326 (Fed. Cir. 2015) (quoting 37 C.F.R. § 42.301(b)). As the PTO’s Trial Practice Guide explains, “1) mere ‘recitation of known technologies’; 2) ‘reciting the use of known prior art technology’; and 3) ‘combining prior art structures to achieve the normal, expected, or predictable results of that combination’” are insufficient to render a patent a technological invention. *Id.* (quoting 77 Fed. Reg. 48756, 48764 (Aug. 14, 2012)). Known technologies that would not typically render a patent a technological invention include: “computer hardware, communication or computer networks, software, memory, computer readable storage medium, scanners, display devices or databases, or specialized machines, such as ATM or point of sale device.” J.A.3242.

2. The Ballard Patents are the Original CBM Patents

Congress designed § 18 for patents like the Ballard patents—patents issued in the wake of *State Street Bank*, called into question after *Bilski*, and holding an industry hostage. *Supra* III.A. Congress identified the Ballard patents by name, *id.*, and raised specific concerns about their validity:

These patents consist of long recitations of technology created by others to implement the supposed “invention” of transmitting and processing checks and other business records electronically Both of these patents are obviously business-method patents, and it is difficult to see how they were even novel and nonobvious and otherwise valid under the more liberal *State Street* standard, much less how they could survive the strictures of *Bilski*.

J.A.2841. Congress structured CBM review to address these concerns by defining “covered business method” and authorizing the PTO to review previously-reexamined or litigated patents, including under § 101. *Supra* III.A. The Board fulfilled Congress’s intent when it properly found the Ballard patents eligible for CBM review. J.A.2666-2670; J.A.99-101.

Despite the legislative history showing that Congress targeted the Ballard patents for CBM review, DataTreasury argues—for the first time on appeal—that the legislative history instead indicates that the Ballard patents “should be excluded from the definition of covered business method patent.” DT_Br. 22-23. Congress’s failure to pass an earlier bill, DT_Br. 9, does not mean that Congress intended to

exclude the Ballard patents from § 18. DataTreasury does not and cannot dispute that § 18's legislative history specifically refers to concerns over the Ballard patents. J.A.2611; J.A.2684-2686; *e.g.*, J.A.2841. Congress's adoption of the broader § 18 shows only that its concerns extend beyond the Ballard patents.

Second, DataTreasury argues that earlier reexaminations and a past jury trial should exempt the Ballard patents from CBM review. DT_Br. 22-23. But DataTreasury does not cite any legal authority showing that CBM review excludes patents subject to prior validity challenges. Both the statute and legislative history reflect Congress's expectation that the PTO would review previously-considered business methods patents, especially those issuing pre-*Bilski*, like the Ballard Patents. J.A.2841; S5428. By definition, every CBM review involves a patent that the PTO previously found patentable. The trial DataTreasury says considered § 101 issues concluded in 2010, prior to the Supreme Court's *Bilski* decision, which Congress noted underscores the need for CBM review, J.A.2841. Moreover, the Congressional record shows that ongoing litigation of the Ballard patents created urgency for § 18's passage. J.A.3336.

Third, DataTreasury argues the Ballard patents claim a "mechanical" invention for scanning paper instruments, citing Senator Coburn's remarks. DT_Br. 23. But Senator Coburn's exclusion requires "novelty [that] turns on a technological innovation over the prior art." *Id.* The Ballard patents do not claim a

new “mechanical invention” for scanning documents, but instead use conventional, off-the-shelf scanners and computer technology. *Supra* III.C. The patents’ specifications, inventor’s testimony, J.A.3329 [4:7-23], and DataTreasury’s admissions prove that the alleged invention uses only a “generic scanner,” J.A.2809 [26:22-23], and the invention was “not the scanning,” J.A.2813 [30:19-22]. DataTreasury admits on appeal that the inventor “did not invent each and every component of [the] system.” DT_Br. 21-22. The inventor also admitted that he did not invent any hardware or software component. J.A.3310 [63:15-24]; J.A.3329 [4:7-6:18]. As the Board properly concluded, no component in the claims, alone or in combination, provides technological innovation. J.A.99-100.

3. CBM Prong 1: DataTreasury Admits the Board’s Determination that the Patents are Financial was Not Arbitrary and Capricious

DataTreasury does not dispute the first CBM prong—that the Ballard patents “claim[] a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service.” AIA § 18(d)(1); DT_Br. 19. DataTreasury admits that “the Board’s determination that the Patents fall within the first part of the definition cannot be said to be arbitrary and capricious,” DT_Br. 19, the undisputed standard of review, DT_Br. 17; *supra* V.

4. CBM Prong 2: The Board Correctly Ruled that the Claims are Not Directed to Technological Inventions

The only issue here is whether the patents claim a “technological invention,” thereby excluding them from CBM review. AIA § 18(d)(1); 37 C.F.R. § 42.301. Because they do not claim “a technological feature that is novel and unobvious over the prior art; [or] solve[] a technical problem using a technical solution,” the Ballard patents are CBMs. *Versata*, 793 F.3d at 1326 (quoting 37 C.F.R. § 42.301(b)). The Board correctly determined that the claims are not technological inventions because they “merely require the use of ‘off the shelf’ technology, including conventional imaging scanners attached to a general purpose computer network.” J.A.100. Substantial evidence supports this ruling. The patents admit that each component was well-known, the inventor admits he did not invent any hardware or software, and FIS’s expert testified that the components and combination were well-known and obvious. *Supra* III.D.1. DataTreasury offered no evidence in rebuttal, *supra* III.D.2.a, and the lack of record citations in DataTreasury’s brief confirms that the Board did not “overlook” any CBM evidence, DT_Br. 18.

Lacking expert testimony, DataTreasury relied only on the patent specifications and attorney argument. DataTreasury argued that the “three-tier architecture” in the patents is a “technological feature[]” that exempts the claims from CBM review. J.A.2695-2696. But to the extent a three-tier architecture (or

two-tier architecture) appears in the claims, it is not innovative. As the Board recognized, “the three-tier system can be viewed as reflecting a banking system having networked branch offices, regional offices and a central home office.”

J.A.100. This hierarchical or tiered network, appearing in the claims via “remote,” “intermediate,” and “central” subsystems, was well-known at the time of the invention, as explained by Dr. Alexander’s discussion of the three-tiered prior-art Campbell patent and the three-tiers of earlier manual check processing. *See supra* III.C.1; III.D.1.b.

On appeal, DataTreasury argues that “the combination of technological components is a new and nonobvious technological innovation as demonstrated by the initial issuance of the Patents and their subsequent reexamination, from which they issued without alteration.” DT_Br. 22; *see also* J.A.2696. Under DataTreasury’s flawed logic, no patent would ever be subject to CBM review, which clearly was not the intent of the AIA § 18(a)(1) (establishing “post-grant review” for CBM patents). Section 18 also does not exclude previously reexamined patents, which makes sense because §§ 101 and 112 grounds, available in CBM review, 37 C.F.R. § 42.304(b)(2), are unavailable in reexamination, which is limited to prior art challenges, 37 C.F.R. § 1.510(a). Indeed, Congress specifically contemplated CBM review of patents that had been reexamined. *See supra* III.D.1.b.

DataTreasury variously characterizes the claims as “computer-heavy” (DT_Br. 16), a “complex data processing system” (DT_Br. 18), a “complex assembly of technical components,” and a “technical database structure,” (DT_Br. 21). But simply calling generic prior art computers “complex” or “technical” does not create a technological invention. As the Board noted, the PTO’s Trial Practice Guide specifically excludes the components DataTreasury relies on—“workstations, scanners, servers, networks, CPU’s, modems, storage devices, etc.,” DT_Br. 21—explaining: “known technologies, such as *computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device*” are insufficient to establish a technological invention. J.A.126-127 (emphasis added).

Contrary to DataTreasury’s assertion, DT_Br. 21-23, claiming general purpose computing elements does not create a technological invention. Rather, the remote, intermediate, and central subsystems refer to generic, off-the-shelf components, *supra* III.C, as Dr. Alexander explained in his component-by-component analysis, J.A.2109-2122 [¶¶104-138]. According to the patents, the remote DAT is a “general purpose network computer” running known prior art operating systems, J.A.2014 [5:40-45], the intermediate DAC is a server running known Microsoft or Windows software, J.A.2017 [11:57-62], and the central DPC

is a workstation “available from Compaq” that “has the ability to perform standard operations” of a computer, J.A.2018-2019 [14:51-61, 15:9-15]. This Court determined that such “conventional computer components cannot change the fundamental character of [the] claims” and do not create a technological invention under § 18. *Blue Calypso*, 2016 WL 791107, at *4, *6 (“hardware, software, a network, and communication devices” not technological inventions); *see SightSound*, 809 F.3d at 1316. As the Board correctly noted, DataTreasury did not explain “how a three-tier system is a technological invention” and the Board properly rejected DataTreasury’s argument that a three-tier network is technological. J.A.16-17; *see* J.A.109-110.

Although DataTreasury suggests that the field and summary of the invention identify the “technological nature,” DT_Br. 20-21, DataTreasury does not address whether the *claims* solve a technical problem with a technical solution, which is the actual question, 37 C.F.R. § 42.301(b). While providing “high performance” or being “fault tolerant” with “maximal security” may be technological, DT_Br.20-21, DataTreasury does not identify anything in the *claims* that recites these features that the Board could have overlooked.

B. The Board Correctly Held the Ballard Patents Unpatentable Under 35 U.S.C. § 101 Because They Cover the Abstract Idea of Transferring Data from One Location to Another and Do Not Recite More

The Board correctly found that all claims of the Ballard patents are unpatentable under 35 U.S.C. § 101. The claims are directed to the abstract idea of “[t]ransferring information from one location to another,” and in some claims additionally “encrypting” information. The claims do not add meaningful limitations to this abstract idea because they merely arrange known computer components into a conventional tiered network and recite known processes at a high level of generality. Faced with DataTreasury’s reliance on the generic tiered network and “known” encryption methods, the Board properly credited Dr. Alexander’s unopposed testimony that each and every element of every claim was routine and conventional. On appeal, DataTreasury offers new, unsupported argument to allege meaningful limitations and disputes the Board’s use of representative claims. This Court should reject these arguments and affirm the Board’s conclusion that all claims are unpatentable under § 101.

1. Computer-Related Patents Must Claim More Than Generic Computer Components and Processes

The law of § 101 patent-eligibility has changed since the Ballard patents issued. *See supra* III.A. Recognizing this shift in the law, Congress empowered the PTO to reconsider patents in CBM review for compliance with the new § 101

framework. J.A.2841; *supra* III.A. The Board correctly found that the Ballard patents are not patentable under today’s controlling framework. J.A.18-19.

In *Mayo*, the Supreme Court established a two-part framework for analyzing patent-eligibility under § 101 for claims directed to a law of nature or natural phenomenon, which was later extended to claims directed to computer-implemented abstract ideas. *Alice*, 134 S. Ct. at 2355. Under the *Mayo/Alice* framework, one must determine whether claims are drawn to a patent-ineligible concept. *Id.*; J.A.102. If so, then one must “consider the elements of the claim both individually and ‘as an ordered combination’” to see if there is an “‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice*, 134 S. Ct. at 2355 (citations omitted); J.A.102. This requires claim elements that “offer[] a meaningful limitation beyond generally linking ‘the use of the [method] to a particular technological environment.’” *Alice*, 134 S. Ct. at 2360 (citation omitted).

While the Courts have not “delimit[ed] the precise contours of the ‘abstract ideas’ category,” claims directed to “fundamental economic practice[s]” and basic “building blocks of human ingenuity” are unpatentable abstract ideas. *Id.* at 2354, 2357. “[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* at 2358.

2. The Ballard Patents Cover an Abstract Idea

The Board properly concluded that the claims are directed to the abstract idea of “transferring information from one location to another where the transferred information is unreadable without a secret decoder key.” J.A.103; J.A.50. Claim 26 of the ’988 patent recites:

A method for central management, storage and verification of remotely captured paper transactions from documents and receipts comprising the steps of:

capturing an image of the paper transaction data at one or more remote locations and sending a captured images of the transaction data;

managing the capturing and sending of the transaction data;

collecting, processing, sending and storing the transaction data at a central location;

managing the collecting, processing, sending and storing of the transaction data;

encrypting subsystem identification information and the transaction data; and

transmitting the transaction data and the subsystem identification information within and between the remote location(s) and the central location.

J.A.2024 [25:11-28]. Claim 43 of the ’137 patent is similar, but specifically recites imaging and transmitting “checks,” rather than “documents and receipts.”

J.A.2071 [28:29-45]. Although some claims lack an encryption limitation, the claims without it are broader and more abstract because they are merely directed to

“transferring information from one location to another.” J.A.102 n.3; *see* J.A.2770 n.3.

The claimed transferring information from one location to another is similar to fundamental concepts this Court has previously found to be abstract. For example, collecting data using a scanner, recognizing certain data from the scanned image, and storing the recognized data was found abstract because “[t]he concept of data collection, recognition, and storage is undisputedly well-known.” *Content Extraction*, 776 F.3d at 1347. Claims drawn to well-known business practices using computers, such as the use of a financial clearinghouse, *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012), and providing a transaction performance guaranty, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014), have also been found impermissibly abstract.

The abstract nature of the claimed transferring information from one location to another is confirmed because “humans have always performed” it. *Content Extraction*, 776 F.3d at 1347. Indeed, DataTreasury admitted that the claimed functions were “well known, fundamental and necessary with respect to banking procedures and transactions” that were previously performed “by hand” prior to the patents’ filings. J.A.2631. DataTreasury also admitted that scanning and transmitting data were “routine,” J.A.2725, and “universal,” J.A.2720, in the financial field, and that encrypting data was “ubiquitous,” J.A.2734, prior to the

Ballard patents’ filing. In view of these admissions, and FIS’s expert’s testimony, *see supra* III.D.1.b, the Board concluded that capturing, encrypting, processing, and transmitting financial data is a “routine business practice[],” J.A.107 (citing *Alice* and *Bilski*), that is an unpatentable fundamental economic practice under *Alice*, J.A.103 (citing *Alice*, 134 S. Ct. at 2356). Regarding encryption, DT_Br. 30-33, 36-38, the Board recognized that encrypting information when sending it from one location to another is “a basic building block of human ingenuity that has been used for hundreds, if not thousands, of years,” J.A.104. Accordingly, the Board properly concluded that the claims are directed to the abstract idea of “transferring information from one location to another where the transferred information is unreadable without a secret decoder key.”⁸ J.A.103.

As DataTreasury admits, DT_Br. 25, “the concern that drives [the § 101] exclusionary principle [is] one of pre-emption,” *Alice*, 134 S. Ct. at 2354. This concern stems from the idea that “patent law not inhibit further discovery by improperly tying up the future use of these building blocks of human ingenuity.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (quoting *Alice*, 134 S. Ct. at 2354). But “[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate

⁸ The Board’s construction of “encrypt”—to “[c]onvert into a form unreadable by anyone without a secret decryption key.” J.A.99; J.A.103 n.3—is not contested on appeal. Thus, the Board’s abstract idea simplifies to “transferring information from one location to another where the transferred information is [encrypted].”

patent eligibility.” *Id.* DataTreasury’s allegation that its patent claims cover check-imaging systems in an entire industry, when they recite only off-the-shelf, prior art technology to perform admitted routine business practices, further evidences the claims’ preemptive breadth. *See supra* III.B. Incongruently, DataTreasury touts the claims’ breadth, calling them “application agnostic,” DT_Br. 18, yet argues that the claims are “tied to narrow, specific applications,” *id.* at 24.

DataTreasury argues that the Board’s abstract idea analysis “read out of the claims the computer-rooted limitations directed to specific two- and three-tier computer network architectures and the capturing, processing, transmitting, storing and encrypting of specific data.” DT_Br. 30. DataTreasury’s assertion is incorrect, because the Board properly considered the so-called “computer-rooted limitations” under the second *Alice* prong. J.A.108-111.

DataTreasury argues that its claims are not directed to an abstract idea because they are “directed to specific network-tiered computer systems for capturing, processing, and transmitting specific image data that, for many claims, require the encryption of that data.” DT_Br. 28. But, as the Board properly held,

the challenged claims pose a risk of unacceptable preemption as the claim language is generic in nature—referring to capturing images, managing the transaction data, collecting the data, encrypting subsystem identification information and transaction data, verifying data and transmitting data within and between a remote location and a central location.

J.A.23; *see also* J.A.106. The encryption recited in some claims does change the claims’ abstract nature and cannot not confer patent-eligibility, DT_Br. 30-32, because “the absence of complete preemption does not demonstrate patent eligibility,” *Ariosa*, 788 F.3d at 1379.

3. The Claims Do Not Meaningfully Limit the Abstract Idea

This Court’s ruling in *Content Extraction* confirms the Board’s ruling here. “For the role of a computer in a computer-implemented invention to be deemed meaningful in the context of this analysis, it must involve more than performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Content Extraction*, 776 F.3d at 1347-48 (citing *Alice*, 134 S. Ct. at 2359). Recognizing that “banks have, for some time reviewed checks, recognized relevant data . . . , and stored that information in their records,” this Court found claims patent-ineligible for being drawn to “the abstract idea of 1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in memory.” *Id.* at 1347. Limiting this abstract idea using “existing scanning and processing technology to recognize and store data from specific data fields” did not provide an “inventive concept.” *Id.* at 1348. Likewise here.

a. The Claimed “Tiered” Computer Network Does Not Meaningfully Limit the Abstract Idea

DataTreasury’s claimed “tiered” network recites only a generic computer system similar that failed to transform an abstract idea into a patent-eligible

concept. *See Alice*, 134 S. Ct. at 2360 (“purely functional and generic” computer elements, such as a “data processing system,” “communications controller,” or “data storage unit” not inventive); *Content Extraction*, 776 F.3d at 1348 (“use of a generic scanner and computer” not inventive); *buySAFE*, 765 F.3d at 1355 (sending data over a network is “not even arguably inventive”).

In fact, DataTreasury admitted that the components of each network tier “in and of themselves, is a known concept.” J.A.2815 [32:20-21]. In prior sworn testimony, the inventor confirmed that he did not invent computer hardware or network. J.A.3329-3331 [4:7-6:18]; J.A.3325. And the Board heard evidence from FIS’s expert that two- and three-tiered computer networks were well-known and conventional, even in the banking industry. J.A.109; *supra* III.D.1. The Board credited Dr. Alexander’s testimony that tiered architectures were well-known in the prior art and banking industry and rejected DataTreasury’s conclusory arguments. J.A.108-109.

DataTreasury’s arrangement of the generic components is also insignificant. The alleged “specific network-tiered computer system,” DT_Br. 28, appears in the claims only as a “remote location,” “central location,” and “intermediate location,” or a “remote data access system” and a “central data processing system,” communicating over a network. *See supra* III.C.1. Even DataTreasury’s description on appeal refers to the two-tier system as “a network containing a

remote data access subsystem and a central data processing subsystem,” and the three-tier system as “a network containing a remote subsystem, an intermediate subsystem, and a central subsystem.” DT_Br. 27, 39. Moreover, the tiered computer network was not innovative. J.A.109; *see* J.A.2093-2095 [¶¶29, 34, 48-51, 58, 70-71, 125]; J.A.2139-2142 [¶¶208-211].

When asked to identify the “meaningful limitations” in the claims, DataTreasury answered only that the claims “capture data, move data, and record data” and “archive[] scanned document information in a secure, central computer system.” J.A.2816-2818 [33:11-35:10]. As the Board correctly noted, however, the claims do “not require particular apparatus that limit the claim in a meaningful way.” J.A.134. And “archiving scanned document information in a secure, central computer,” J.A.2818 [35:9-10], does not “offer[] a meaningful limitation beyond generally linking ‘the use of the [method] to a particular technological environment, that is, implementation via [a two- or three-tiered network of] computers,’” *Alice*, 134 S. Ct. at 2360 (internal quotation marks omitted). Furthermore, this Court recognized that transferring data over a network “is not even arguably inventive.” *buySAFE*, 765 F.3d at 1355. Thus, no matter how “specific” or “concrete,” DT_Br. 24, a computer network fashioned out of conventional computer components cannot render claims patent eligible.

DataTreasury now alleges for the first time that Mr. Hiles’s testimony, submitted by FIS, shows that the claims were not routine or conventional. DT_Br. 37 (citing J.A.2281-2282). Although DataTreasury suggests that the Board “did not analyze” this evidence, DT_Br. 37, DataTreasury never cited or relied on this evidence at the Board. Although Mr. Hiles opined in a prior litigation that the claims were nonobvious over six prior art references, he never mentioned the tiered architecture. J.A.2268-2298. By not arguing this below, DataTreasury waived any argument based on Mr. Hiles’s testimony. *Gant v. U.S.*, 417 F.3d 1328, 1332 (Fed. Cir. 2005). But even considering the testimony, nothing undermines the Board’s crediting of Dr. Alexander and the conclusion that the “three-tier architecture was conventional in the banking and financial services industry.” J.A.109.

b. The Claimed Capturing, Processing, Transmitting and Encrypting Does Not Provide Meaningful Limitations on the Abstract Idea

Despite DataTreasury’s argument to the contrary, DT_Br. 27, the claims do not recite a “specific” method of data capture, processing, or transmission, but instead recite only generic steps of “capturing”, “processing”, and “transmitting within and between” network components. *See supra* III.C.2; J.A.2024 [25:11-28]. “Simply appending conventional steps, specified at a high level of generality,’ [is] not ‘*enough*’ to supply an ‘inventive concept.’” *Alice*, 134 S. Ct. at 2357 (citation omitted). Similar data processing steps have been found not to render claims

eligible under § 101. In *Content Extraction*, for example, this Court considered claims that used “existing scanning and processing technology to recognize and store data from specific data fields” and found them abstract and insufficient to provide an inventive concept. 776 F.3d at 1348. And, in *buySAFE*, the Court found that transmitting data “over a network” was “not even arguably inventive.” 765 F.3d at 1355. And the Supreme Court in *Alice* rejected similar functionally-recited computer elements—a “data processing subsystem”—as reciting a “purely functional and generic” component that does not provide meaningful limitations to the claimed abstract idea. 134 S. Ct. at 2360. DataTreasury’s claimed functional steps are no different.

DataTreasury admitted to the Board that “[i]maging or scanning a check or other financial document is a routine practice in the business of banking/financial matters,” J.A.2468; *see also* J.A.2725, and “essentially universal, especially in business environments,” J.A.2471; J.A.2720, and that encryption was “ubiquitous” prior to the patents, J.A.2488; J.A.2734. DataTreasury also admitted that the claimed data processing steps are “functions that are well known, fundamental, and necessary with respect to banking procedures and transactions, which were at one time performed ‘by hand.’” J.A.2631; *see also* J.A.2388. FIS and its expert explained how every step of the claims—including capturing, processing, encrypting, and transmitting—was well-known in the prior art. J.A.2566-2582;

J.A.2237-2243; J.A.2109-2115 [¶¶105-111]. The Board thus properly concluded that, rather than providing meaningful limitations, “the claim language is generic in nature—referring to capturing images, managing the transaction data, collecting the data, encrypting subsystem identification and transaction data, verifying data and transmitting data within and between a remote location and a central location.”

J.A.23; *see also* J.A.106.

Data Treasury argues that the claimed encryption is significant (*e.g.*, DT_Br. 32), but the patents admit that the claims are not directed to a new method of encryption, and instead use an “encryption algorithm which is well known to an artisan of ordinary skill in the field.” J.A.2015 [8:4-5]; J.A.104. As the Board correctly found, J.A.104-106, DataTreasury’s reliance on *TQP Development, LLC v. Intuit Inc.*, Case No. 2:12-cv-180, 2014 U.S. Dist. LEXIS 20077 [2014 WL 651935] (E.D. Tex. Feb. 19, 2014), DT_Br. 32, is misplaced because unlike the new data encryption method in *TQP*, Ballard’s encryption is admittedly “well-known,” J.A.2741, and “ubiquitous” prior to the patents’ filing, J.A.2734.

DataTreasury offers two additional § 101 arguments on appeal that were not made at the Board. First, DataTreasury admitted the claimed functions were once performed “by hand,” J.A.2631, but now takes issue with the Board’s finding that the claims covered what could be “performed with pencil and paper,” DT_Br. 30. But having admitted below that check processing was once done manually,

DataTreasury cannot now protest. Second, DataTreasury newly argues that encryption of “specific data” (the subsystem identification information) provides the claims with “significantly more.” *E.g.*, DT_Br. 34, 36. DataTreasury should not be allowed to rewrite the record and raise arguments it waived. *See Gant*, 417 F.3d at 1332 (“Arguments not made in the court or tribunal whose order is under review are normally considered waived.”). Even if DataTreasury could raise this new “specific data” argument on appeal, this Court has explained that processing “specific” data is no more patentable than processing generic data. In *Content Extraction*, the “use of a generic scanner and computer to perform well-understood, routine, and conventional activities commonly used in industry” did not add significantly more to the claimed abstract idea, even though the steps were performed on “specific data fields.” *Content Extraction*, 776 F.3d at 1348.

Even if it were a meaningful limitation to encrypt “specific” data, DT_Br. 27, 29, 34, 36, FIS’s expert, in unrebutted testimony, explained that subsystem identification information was known and transmitted on the backs of prior art checks, and encryption of those transmissions was routine and conventional. J.A.2098-2101 [¶¶46, 53, 55, 61, 63-65]; J.A.2114-2115 [¶¶110-111]; J.A.2122 [¶138]. Such routine and conventional steps cannot transform an ineligible abstract idea into a patent eligible claim. *Alice*, 134 S. Ct. at 2359-60.

4. Following *Mayo/Alice*, the Board Considered Every Element, As Well As the Combination

FIS’s expert explained the conventional and routine nature of the tiered network, and every other claim element, alone and in combination, providing an element-by-element analysis of the claims and considering the claims as a whole, supported by the patents’ own admissions and the teachings of the prior art, J.A.2109-2122 [¶¶104-138], and DataTreasury did not challenge this testimony or cross-examine Dr. Alexander. *See supra* III.D.2.e. Thus, the Board properly considered all elements of the claims, and relied on the uncontroverted evidence before it. J.A.5; J.A.26-28; J.A.88; J.A.109-111.

DataTreasury argues that the Board “only addressed two specific aspects individually—the three tier architecture and data encryption generally.” DT_Br. 38. But DataTreasury does not—and cannot—point to any other claim features that it argued made the claims patentable. In fact, DataTreasury’s brief lacks any citation to the arguments made below on § 101. After FIS satisfied its burden to show unpatentability for each claim, DataTreasury’s failure to argue specific claim elements waives those arguments. *Gant*, 417 F.3d at 1332; J.A.3350 (arguments not raised in Response are waived).

5. The Board Did Not Err in Evaluating Representative Claims to Determine Subject Matter Eligibility Under § 101

As the Board did here, J.A.103; J.A.20, the Supreme Court and this Court routinely rely on representative claims to examine patent eligibility, *see, e.g., Alice*, 134 S. Ct. at 2352 n.1, 2359-60 (affirming invalidity of over 200 claims across 4 patents based on a representative claim); *Content Extraction*, 776 F.3d at 1345, 1351 (affirming district court’s invalidation of 4 patents, including 242 claims, based on two representative claims). FIS and the Board treated claims 26 and 46 of the ’988 patent and claim 43 of the ’137 patent as “representative” of the challenged claims, and DataTreasury did not protest. Instead, DataTreasury maintained that it “didn’t have to argue the claims separately.” J.A.2808 [25:18-19]. On appeal, DataTreasury tries to introduce new arguments that “the dependent claims include additional computer-centric limitations,” DT_Br. 28, but the Court should consider these waived. *Gant*, 417 F.3d at 1332. FIS’s petitions J.A.2326-2343 (’137 petition); J.A.2564-2582 (’988 petition), including FIS’s unrebutted expert testimony, J.A.2094-2123, properly addressed the subject matter of every element of every claim, and the Parties and Board used representative claims during the proceedings. J.A.5; J.A.51. DataTreasury “could have identified claims in its opposition brief that it believed would not be fairly represented” by the representative claims. *Content Extraction*, 776 F.3d at 1348. It did not, despite the Board’s warning, J.A.3350, so it has forfeited these arguments on appeal, *Content*

Extraction, 776 F.3d at 1348. Regardless, the Board’s decision is supported by substantial evidence that every element of every claim is routine and conventional. J.A.5; J.A.51.

6. The Board Did Not Err in its Consideration of the Machine-or-Transformation Test

Confusingly, DataTreasury told the Board that the machine-or-transformation test “does not have any applicability in this proceeding,” J.A.2718, but now argues that its claims are patent-eligible under the machine-or-transformation test, DT_Br. 39. Nevertheless, the Board’s final written decisions properly concluded that the claims are not tied to specific machines in meaningful ways and do not patentably transform anything. J.A.110. As explained above, the patents require only generic, well-known components used in their ordinary and expected fashion, and therefore the machine prong is not met, J.A.2334; J.A.2572. And, no patent-eligible transformation occurs because in the claims, “transaction (financial) data are duplicated, organized, and moved from one place to another.” J.A.110. Data manipulation is not a patent-eligible transformation. *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*, 687 F.3d. 1266, 1273 (Fed. Cir. 2012).

C. Substantial Evidence Supports the Board’s Holding that the Ballard Patents Lack Written Description for “Encrypting Subsystem Identification Information”

Substantial evidence supports the Board’s conclusion that claims 1-41 and 51-69 of the ’988 patent and claims 1-67 of the ’137 lack written description for

“encrypting subsystem identification information.” J.A.111-113; J.A.28-31. The Board properly credited Dr. Alexander’s unopposed testimony, J.A.2584-2590; J.A.2128-2133 [¶¶160-183], and found FIS met its burden of proving unpatentability for lack of written description under 35 U.S.C. § 112. J.A.103-104; J.A.97-98. On appeal, DataTreasury does not refute Dr. Alexander’s testimony or point to any evidence showing a different understanding by a POSITA, but instead relies on attorney argument, most of which was not presented below. This Court should, therefore, affirm the Board’s § 112 decision.

1. Written Description Requires Disclosure in the Specification for a Skilled Artisan, Not Obviousness

The written description requirement of 35 U.S.C. § 112 requires the specification to “reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms.*, 598 F.3d at 1351. Although the specification’s terms, phrases, or diagrams are understood from the viewpoint of the POSITA, all of the claim limitations must appear in the specification. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1571 (Fed. Cir. 1997). When the specification does not expressly describe the claimed subject matter, the disclosure may be inherent, but the missing subject matter “must necessarily be present” in the specification such that the POSITA “would recognize such a disclosure.” *TurboCare Div. of Demag Delaval TurboMachinery Corp. v. Gen. Elec. Corp.*, 264 F.3d 1111, 1119 (Fed. Cir. 2001).

When a patent specification neither expressly nor inherently describes the claim limitation, written description cannot be satisfied simply by showing the claim element would have been obvious to the POSITA. *Lockwood*, 107 F.3d at 1571-72.

2. The Claims Require Two Different Types of Encrypted Data, but the Specification Does Not Describe Encrypting Both

Claims 1-41 and 51-69 of the '988 patent and claims 1-67 of the '137 patent require two different types of encrypted information: encrypted paper transaction data, and encrypted subsystem identification information. J.A.111; J.A.2123 [¶¶144-145]. As DataTreasury acknowledges, J.A.2837 [54:19-23], this separate recitation means that paper transaction data is different from subsystem identification information. *See Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72 (Fed. Cir. 1999); J.A.111, 113. The Board, supported by expert testimony, correctly recognized that the subsystem identification information is not part of the scanned paper document described in the specification. J.A.111; J.A.2123 [¶¶144-145].

The paper transaction data is data on the scanned paper document, like the receipt in Figure 3B, which includes a price, credit card number, and other information about a sale. J.A.2123-2124 [¶¶147-148]; *supra* III.D.1.c. In Figure 3A, the patent describes scanning the receipt containing the paper transaction data,

then compressing and encrypting the scanned image to make what the patents call an ECBI (encrypted compressed bitmap image). J.A.2125 [¶¶149-150], *supra* III.C.2. After this encryption, a tag is added to make a “tagged” ECBI (or “TECBI”), but there is no disclosure of encrypting the tag. J.A.2015 [7:52-8:30]; J.A.2123 [¶149]. DataTreasury appears to tacitly acknowledge that there is no express description of encrypting the tag. DT_Br. 46-48.

The patents’ description for processing the TECBI after transmission confirms that the tag remains unencrypted. The tag is first removed to obtain the ECBI, and after the tag removal, the ECBI is then decrypted to obtain the CBI, and there is no description of decrypting the tag itself. J.A.2022 [21:3-10]; J.A.2126-2127 [¶¶156-157].

3. The DAT_TERMINAL_ID Is the Claimed Subsystem Identification Information

The Board properly recognized that the paper transaction data is information on the scanned receipt, while the patents describe the subsystem identification information as the DAT_TERMINAL_ID. J.A.112-113. The DAT_TERMINAL_ID is part of the tag that is attached to the encrypted paper transaction data (the “ECBI”). J.A.111-113; J.A.89-90. Because the specifications do not define “subsystem identification information,” the question under § 112 is what a POSITA would understand to correspond to this claim term. *Falko-Gunter Falkner v. Inglis*, 448 F.3d 1357, 1363 (Fed. Cir. 2006). The evidence at the Board

showed a POSITA would understand that the DAT_TERMINAL_ID, described at col. 10, lines 31-33, and is part of the tag added after encryption is complete, corresponds to the claimed subsystem identification information. J.A.2126 [¶¶151-153]. Below DataTreasury acknowledged that the subsystem identification information is the tag information. J.A.2822 [39:6-8].

4. There Is No Express Disclosure of Encrypting the DAT_TERMINAL_ID

Having correctly found that the DAT_TERMINAL_ID corresponds to the subsystem identification information in the specification, J.A.111-113; J.A.89-90, substantial evidence supports the Board's conclusion that there is no express disclosure of encrypting the DAT_TERMINAL_ID. Although the patents describe encrypting the imaged paper transaction data to create the ECBI, J.A.2015 [8:3-10], the DAT_TERMINAL_ID is part of the tag attached to the ECBI after encryption is complete, J.A.111; J.A.2016 [10:27-33]; J.A.2126 [¶153].

Both Dr. Alexander and Mr. Hiles acknowledged that a POSITA would not find any express disclosure of encrypting the tag. J.A.2126-2129 [¶¶151-161]; J.A.2283-2284. DataTreasury did not cross-examine Dr. Alexander or introduce its own expert during trial, even when faced with testimony from Mr. Hiles admitting that the patents do not expressly disclose encrypting the tag containing the DAT_TERMINAL_ID, which is the claimed "subsystem identification information," J.A.2780; J.A.2128-2129 [¶¶160-161].

The Board properly rejected DataTreasury's written description argument that relied on encrypting generic "identification information" and generic disclosures of "encryption," DT_Br. 41-43,⁹ relying on Dr. Alexander's testimony that a POSITA would understand the subsystem identification information in the specification is the DAT_TERMINAL_ID, not any generic device, J.A.111-113; J.A.2126 [¶¶152-153]. It would be illogical for a paper receipt, such as shown Figure 3B, to list an identifier of a scanner to later be used to process that receipt.

This substantial evidence, including unopposed expert testimony, supports the Board's conclusion that the patents lack express written description for the claimed "encrypting subsystem identification information."

5. There Is No Inherent Disclosure of Encrypting the DAT_TERMINAL_ID

There is no evidence that the subsystem identification information must "necessarily" be encrypted; therefore, the disclosure is not inherent. *King Pharms., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010). DataTreasury asserts that "encryption keys" could be part of the tag, DT_Br. 47-48, but fails to show that encrypting the tag is necessary. The specification discloses attaching an *unencrypted* tag, J.A.2015 [8:13-20]; J.A.2125 [¶149]; J.A.2283-2284, which alone is sufficient to find a lack of inherency. Moreover, the claims challenged under

⁹ To the extent this argument refers to inherency or obviousness argument, it fails for the reasons set forth below.

§ 112 do not recite encryption keys included with the subsystem identification information, J.A.2070 [25:43-65], and a POSITA would know how to encrypt and send the ECBI using standard encryption techniques without transmitting the keys with the data, *supra* III.D.1.c; J.A.2129-2130 [¶¶166-167]. But even if encryption keys are included in the tag, a POSITA would have known how to encrypt those keys without also encrypting the subsystem identification information and other tag fields. J.A.2129-2130 [¶¶168-169]. Therefore, the claimed “encrypting subsystem identification information” is not inherently described.

6. Obviousness Cannot Remedy the Lack of Written Description

To the extent DataTreasury’s generic encryption and encryption key arguments suggest it would be obvious to encrypt the subsystem identification information, DT_Br. 47-48, obviousness cannot remedy a failure to comply with the written description requirement. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306, 1310 (Fed. Cir. 2008). In *PowerOasis*, this Court held that an application’s description of a user interface as part of a vending machine did not provide written description for a remote user interface even though remote interfaces were well-known to a POSITA. *Id.* at 1309-10. DataTreasury makes the same failed argument made in *PowerOasis*. Lacking express or inherent disclosure in the specification, DataTreasury argues that a POSITA would have encrypted the tag because encryption was well-known. DT_Br. 45-48. But obviousness of the

subject matter cannot remedy a lack of written description, so DataTreasury's argument fails.

7. The Board Properly Placed the Burden of Proving Unpatentability on FIS

Contrary to DataTreasury's protest, DT_Br. 43, the Board did not improperly shift the burden to DataTreasury to show validity. Instead, the Board correctly considered the record evidence and found that FIS proved that the patent lacks written description. J.A.113; J.A.89-90. The Board also did not require DataTreasury to show written description for encrypting "*all* of the transferred information." DT_Br. 43. The Board's reference to "all," read in context, is DataTreasury's characterization of the Board's final written decision, not a requirement placed on DataTreasury. J.A.89. The Board considered whether the specification disclosed encrypting the two separate types of information transferred in the claims: paper transaction data and subsystem identification information. J.A.89; J.A.112-113. Based on Dr. Alexander's unrebutted testimony, the Board made findings of fact, *supra* III.D.3.c, and based on this, found that FIS met its burden to show lack of written description, J.A.113; J.A.89-90.

8. DataTreasury's Other § 112 Arguments Are Waived, and Fail to Show Written Description

DataTreasury's other new arguments are waived, *Gant*, 417 F.3d at 1332, including in DataTreasury's Reply brief, *Norman v. U.S.*, 429 F.3d 1081, 1091 n.5 (Fed. Cir. 2005).

DataTreasury newly argues that col. 10, lines 62-67, and encrypting a receipt's image supports the claimed "encrypting subsystem identification information." DT_Br. 44-46. Below, however, DataTreasury argued that this disclosure refers to encrypting generic "identification information" using a subsystem. J.A.2746. The Board properly rejected DataTreasury's argument below, based on Dr. Alexander's testimony. J.A.113; J.A.97-98; *supra* III.D.1.c, VI.C.2-5. DataTreasury's new argument is misplaced. First, DataTreasury does not address the Board's finding that subsystem identification information is separate from paper transaction data, *supra* III.D.3.c; and therefore, cannot be included in the encrypted paper transaction data of the receipt in Figure 3B, J.A.89-90; J.A.111-113. DataTreasury admitted this below and cannot dispute this, *supra* III.D.2.f; J.A.2837 [54:19-23]; J.A.2822 [39:4-8], which contradicts DataTreasury's argument on appeal. Second, DataTreasury did not identify any evidence of a POSITA's understanding that subsystem identification information is part of the paper transaction data, and fails to rebut Dr. Alexander's testimony. *See* DT_Br. 44-46. Because the claimed subsystem identification information is not

information on the scanned receipt, DataTreasury fails to show written description support. J.A.111-113.

DataTreasury also newly relies on a district court’s construction of “subsystem identification information.” DT_Br. 46. But, the Board’s found—and the expert evidence shows—subsystem identification information is different from paper transaction data (*e.g.*, receipt of Figure 3B) in the claims. J.A.111-113; J.A.2123 [¶¶144-146]. DataTreasury has not identified any information that is (1) *not* part of the paper transaction data, (2) encrypted, and (3) identifies remote subsystems. DataTreasury’s “attorney arguments are insufficient to undermine the credible [expert] testimony” credited by the Board. *See Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1367 (Fed. Cir. 2014).

DataTreasury newly suggests TERMINAL_ID 372 of Figure 3B constitutes “subsystem identification information.” DT_Br. 44-45; J.A.2836 [53:10-12]. Dr. Alexander’s testimony disproves this assertion, J.A.2131-2132 [¶¶171-174], and DataTreasury’s own litigation expert admitted that the TERMINAL_ID 372 was not “subsystem identification information,” J.A.2276-2277 [87:12-88:8]; J.A.2833 [50:4-13], which DataTreasury did not challenge.

DataTreasury argues that encryption is “agnostic” to the data being encrypted and that “there is nothing special or unique about” subsystem identification information that precludes its encryption. DT_Br. 41-42. This new

argument is insufficient because, even if encryption is “agnostic” to the data, it does not show encryption of the subsystem identification information—the DAT_TERMINAL_ID—in the specification.

DataTreasury also argues that not encrypting the entire tag is like “locking a secure box and then stamping the lock’s combination on the back of the lock” and would “jeopardize the [system’s] security.” DT_Br. 42, 47-48. The unchallenged evidence below shows that a POSITA would have known how to transmit the tag without encrypting the subsystem identification information. J.A.2129-2134 [¶¶162-184]; *supra* III.D.1.c. The Board properly considered the record, credited Dr. Alexander’s testimony, and correctly applied the law to find that the patents lack written description for the claimed “encrypting subsystem identification information.”

VII. CONCLUSION AND STATEMENT OF RELIEF SOUGHT

For these reasons, this Court should affirm the Board’s determinations that (1) the ’988 and ’137 patents are covered business method patent under AIA § 18, (2) all claims of the ’988 and ’137 patents are unpatentable because they do not recite patent-eligible subject matter under 35 U.S.C. § 101, and (3) claims 1-41 and 51-69 of the ’988 patent and claims 1-67 of the ’137 patent are unpatentable for lack of written description.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on March 21, 2016, this BRIEF FOR APPELLEE was filed electronically using the CM/ECF system and served via the CM/ECF system on registered counsel.

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CERTIFICATE OF COMPLIANCE

I certify that, based on the processing software used to create this BRIEF FOR APPELLEE, Fidelity National Information Services, Inc., the word count is 13,973 words.

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